

WHAT IS CLAIMED IS:

1. An IC comprising;
an internal circuit;
5 a debug I/F circuit for debugging the internal circuit
from externally; and
an authentication circuit which is provided between
the debug I/F circuit and a debug terminal for connecting outside,
and for transmitting a transmission key from the debug terminal
10 to outside, and authenticating from a signal received from
the debug terminal and said transmission key to enable operation
of the debug I/F circuit.
2. The IC according to claim 1, wherein the authentication
15 circuit cancels a reset signal to the debug I/F circuit for
enabling the operation.
3. The IC according to claim 1, wherein the authentication
circuit generates an authentication key that is encrypted the
20 transmission key by a predetermined key, and collates said
reception signal with the authentication key.
4. The IC according to claim 1, wherein the authentication
circuit time-waits the operation enabling.
- 25 5. The IC according to claim 1, wherein the authentication
circuit generates the transmission key by random numbers.

6. An electronic device mounted with an IC, said IC comprising;

an internal circuit;

5 a debug I/F circuit for debugging the internal circuit from externally; and

an authentication circuit which is provided between the debug I/F circuit and a debug terminal for connecting outside, and for transmitting a transmission key from the debug terminal to outside, and collating the signal received from the debug terminal with the transmission key to enable operation of the debug I/F circuit.

7. The electronic device according to claim 6, wherein the authentication circuit cancels the reset signal to the debug I/F circuit for enabling the operation.

8. The electronic device according to claim 6, wherein the authentication circuit generates the authentication key that is encrypted the transmission key by a predetermined key, and collates the reception signal with the authentication key.

9. The electronic device according to claim 6, wherein the authentication circuit time-waits the operation enabling.

25

10. The electronic device according to claim 6, wherein the authentication circuit forms the transmission key by the random

numbers.

11. A debugging method for utilizing a debug I/F circuit
and debugging an internal circuit from externally, comprising
5 the steps of:

transmitting a transmission key to externally when the
debug I/F circuit is activated; and

10 authenticating the signal received from externally and
the transmission key to enable operation of the debug I/F
circuit.

12. The debugging method according to claim 11, wherein the
authentication step includes a step of canceling a reset signal
to the debug I/F circuit for enabling the operation.

15 13. The debugging method according to claim 11, wherein the
authentication step includes;

a step of generating a authentication key that is
encrypted the transmission key by a predetermined key, and

20 a step of collating the received signal with the
authentication key.

14. The debugging method according to claim 11, wherein the
authentication step has a step of time-awaiting the operation
25 enabling.

15. The debugging method according to claim 11, wherein the

transmission step has a step of forming the transmission key by the random numbers.

16. The debugging method according to claim 11, wherein
5 further comprising;

a step of receiving the transmission key and encoding by a predetermined key, and transmitting the received signal with a discrimination device provided between a debugger and the debug I/F circuit.

10

17. A debugger for debugging an IC, the IC comprising an internal circuit; a debug I/F circuit for debugging the internal circuit; and an authentication circuit which is provided between the debug I/F circuit and the debug terminal, said
15 debugger comprising;

a debug unit for debugging said LSI; and

a discrimination device which is provided between said debug unit and said debug I/F circuit, and for receiving a transmission key from said authentication circuit, encrypting
20 said transmission key by a predetermined key, and transmitting the encrypted key to said authentication circuit to enable debugging of said IC by said debug unit.